

Tabulation of Multiple Responses

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Example of a multiple response question:

“Which narcotic substances did you consume during the last week?”

 *Check all that apply*

- ☐ Cannabis
- ☐ Heroin (alone)
- ☐ Cocaine (alone)
- ☐ Cocktail (cocaine/heroin)
- ☐ Ecstasy
- ☐ Other substances:

.....

..... 

Approaches to store multiple responses:

(Cox/Kohler 2003: Stata FAQ "How do I deal with multiple responses?")

- As a set of indicator or dummy variables, one for each possible answer.

id	d1_can	d2_her	d3_coc	d4_mix	d5_xtc	d6_oth
1	1	0	0	0	1	0
2	1	0	1	0	1	0
3	1	1	0	0	0	0
4	0	1	1	1	0	1
5	0	0	0	0	0	1

I will call this the **indicator mode** or **dichotomous mode**.

Approaches to store multiple responses:

(Cox/Kohler 2003: Stata FAQ "How do I deal with multiple responses?")

- As a set of polytomous variables, one for each response.

id	druguse1	druguse2	druguse3	druguse4	Labels:
1	1	5	0	0	1 "cannabis" 2 "heroin"
2	5	3	1	0	3 "cocaine" 4 "cocktail"
3	2	1	0	0	5 "ecstasy" 6 "other: morphine"
4	3	2	4	6	7 "other: LSD" ...
5	7	0	0	0	0 "no further"

id	druguse1	druguse2	druguse3	druguse4
1	cannabis	ecstasy		
2	ecstasy	cocaine	cannabis	
3	heroin	cannabis		
4	cocaine	heroin	cocktail	morphine
5	LSD			

I will call this the **polytomous mode**.

- Other approaches: ranked multiple responses, composite variables, long form

Approaches to analyze multiple responses:

- For example: Transform the data to indicator mode and use `tabstat`; there are also several user-written commands which might help in some cases.
- However, even simple descriptive analyses of multiple responses are usually a pain (especially if in polytomous mode).
- It would be nice to have a general and easy to use command for the tabulation of multiple responses (just like the official `tabulate` for "regular" variables).
- The package `mrtab` tries to fill this gap (first released on SSC in January 2004, revised in April 2004).
- **New:** `mrgraph` (create graphs of multiple responses).

Features of `mrtab`:

- One-way tables of frequency distribution of responses.
- Two-way tables (tabulate a multiple response set against a "regular" variable).
- Column/row/cell percents based on the no. of responses and/or the no. of respondents.
- Supported data structures:
 - indicator mode (also non-dichotomous)
 - polytomous mode: numeric or string; neglect repeated responses or count all
- Significance tests (two-way tables): overall χ^2 - or LR-test, separate χ^2 - or LR-tests for rows (multiple tests).

Features of `mrtab`:

- Display: sort responses in order of frequency, label response set, specify formats and max. width of response labels, turn on/off labels/names/values, turn on/off breaking wide tables, suppress freq. table, ...
- Misc: generate new indicator variables, `fweights/awweights` allowed, `byable`, `if/in`, exclude missings casewise, saves results in `r()`, ...

Features of `mrgraph`:

- Bar charts (vertical/horizontal) or dot plots of multiple response distributions (one-way or two-way).
- Table plots (similar to `tabplot` by Nick Cox).

Demonstration:

- Data collected by Braun/Nydegger Lory/Berger/Zahner (2001: *Illegale Märkte für Heroin und Kokain*, Bern: Haupt.)
- The respondents were drug addicts in three major cities in Switzerland in 1997.

Demonstration: Example question 1

45) Welche Einnahmequellen hatten Sie in den letzten 3 Monaten?

(Bitte alles Zutreffende ankreuzen)

- ☐ Private Unterstützung (Partner/in, Familie, Freunde)
- ☐ Öffentliche Unterstützung (Arbeitslosenversicherung, Sozialhilfe / Fürsorge, IV-Renten etc.)
- ☐ Dealen
- ☐ Einbrüche / Diebstahl / Raub
- ☐ Geschäfte mit Prostitution (Strich)
- ☐ Mischeln oder Betteln
- ☐ Legale Erwerbsarbeit

45) Which were your sources of income over the last 3 months?

(Check all that apply)

- ☐ private support (partner, family, friends)
- ☐ public support (unemployment insurance, social benefits, disability benefits, etc.)
- ☐ dealing drugs
- ☐ housebreaking/theft/robbery
- ☐ prostitution
- ☐ "mischeln" or begging
- ☐ legal occupation

Demonstration: Example question 2

- 64) Waren Sie in den letzten 12 Monaten von folgenden Delikten in der Drogenszene dieser Stadt betroffen? (Bitte jede Zeile beantworten)

	ja, als Opfer	ja, als Täter	nein
Schläge	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
Waffengebrauch	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
Sexuelle Nötigung, Vergewaltigung	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
Raub (auch Drogendiebstahl)	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0
Erpressung	<input type="checkbox"/> 2	<input type="checkbox"/> 1	<input type="checkbox"/> 0

- 64) Have you been involved in the following offences in the drug scene of your city during the last 12 month? (Please give an answer on each row)

	yes, as victim	yes, as committer	no
hit someone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
use a weapon against someone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sexual harassment, rape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
robbery (including drug theft)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
blackmail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>